been attached a staff of eminent Professors of Oriental languages. The Indian School of University College, and the Oriental Section of King's College, have both done useful work; but, mainly from want of proper organization, the classes of many of the Professors have been but poorly attended, and several important modern languages a knowledge of which is now needed have not been included in the prospectus of either school. The Institute has effected an arrangement with the Colleges whereby the Indian and some allied tongues will continue to be taught in Gower Street, whilst the other languages will be taught at King's College, Strand. This is perhaps the first instance of such an arrangement between the two Colleges having been brought about, and suggests the practical advantage of an extension of the system to other branches of learning. It is only by a proper organization of the higher instruction that London can secure the full advantages of University education, and it may be hoped that as soon as a teaching University can be established in London, the two Colleges and the Medical and Science Schools will be found to co-operate with one another, so as to supplement, without unduly interfering with, each other's field of work.

We should add that the new School of Oriental Studies, which will be opened in October next, is under the general management of a special Committee, which comprises among its members Sir Francis Bell, Sir Charles Wilson, Sir Thomas Wade, Sir Frederic Goldsmid, and representatives of the governing bodies and teaching staffs of the two Colleges.

NOTES.

THIS year the French Association for the Advancement of Science will hold its annual meeting in Paris. The session will last from August 8 to 14. A great number of members are expected to attend the meeting, and it is hoped that many foreign men of science may also be present.

THE International Congress which met in Paris in 1887 to make arrangements for the preparation of a photographic chart of the heavens expressed a wish that a similar Congress might meet for the discussion of questions relating to celestial photography in general. M. Janssen and Mr. Common were asked to take such steps as might be necessary for the attainment of this object; and afterwards, by a Ministerial decision at Paris, an organizing Committee, with M. Janssen as President, was appointed. The arrangements have now been completed, and the Congress will be held in Paris from August 22 to September 3. The aim of the Congress will be to determine the methods which are most suitable for each branch of celestial photography, and the means by which the results obtained by these methods can be most effectually published and preserved.

THE Botanical Society of France announces the following programme of the forthcoming Botanical Congress to be held in Paris:—Tuesday, August 20: opening sitting of the Congress at 2 p.m., at the hotel of the Horticultural Society, 84 Rue de Grenelle; reception of foreign members at 8.30 p.m. Wednesday, August 21: sitting at 9 a.m., devoted to the consideration of the first question, on the utility of an agreement between the different Botanical Societies and Museums, for the purpose of drawing up charts of the distribution of species and genera of plants on the globe; and other communications, if time allows. Thursday, August 22: excursion in the neighbourhood of Paris. Friday, August 23: sitting at 9 a.m., devoted to the consideration of the second question, on the characters furnished by anatomy for classification; and other communications, if time allows. In the afternoon a visit to the botanical collections and laboratories of the Museum of Natural History, and of the other large scientific establishments in Paris. Saturday, August 24: sitting at 9 a.m., miscellaneous contributions. In the afternoon a visit to the Exhibition. Sunday, August 25: banquet to the foreign botanists. During the following week several botanical excursions will also be arranged. Special arrangements with regard to railway fares will be made in favour of botanists announcing their intention to be present to M. P. Maury, the Secretary to the Committee of Organization, 84 Rue de Grenelle, before July 25.

THE following are subjects proposed for discussion at the International Zoological Congress, to be held in Paris (August 5-10):—Adoption of rules on the nomenclature of organisms, and of an international scientific language; determination of regions the fauna of which calls for investigation; methods of investigation and procedure in preparation and preservation of animals; the use of embryology in classification; relations between living and fossil fauna. The Secretary's address is 32 Rue de Luxembourg.

AT the International Congress on Hygiene and Demography, also to be held during the Paris Exhibition, there will be discussed:—The administrative and medical regulations framed in different countries in the interests of health and of infantile life; removal and utilization of solid detritus in cities and the country; regulation and distribution of temperature in the dwelling; action of the soil on germs of disease; protection of watercourses and of ground water from pollution by factory refuse; sanitation of ports; accidents through food-stuffs of animal origin containing poisonous alkaloids; statistics of the causes of death in cities.

SOME valuable reports were distributed among the members of the International Agricultural Congress, which finished its labours at Paris the other day. One of them relates to agricultural education. This report is signed by a dozen authors, among whom are MM. Tisserand, Prilleux, and Jamieson, the latter an Englishman.

THE sixty-second meeting of German Naturalists and Physicians will be held at Heidelberg from September 17 to 23. One whole day will be devoted to excursions in the neighbourhood, and on the evening of September 23 the Castle of Heidelberg will be brilliantly illuminated.

AT a meeting of the Council of Dundee University College, held on the 3rd instant, Mr. J. Martin White announced that he had been authorized by Mr. John Bett, merchant, Rohallion, to offer a third of the amount required to found and establish a Chair of Physiology in connection with the Medical School of the College, provided the remaining two-thirds of the amount required be raised. It was mentioned that, to provide a fund adequate for the endowment of the Chair and the furnishing of suitable buildings and equipment, a sum of about £15,000 would be necessary. The foundation of this Chair would enable the College to complete the first two years of a medical curriculum.

A CIRCULAR from Harvard College Observatory, dated June 26, states that the sum of fifty thousand dollars has been received by that Observatory from Miss C. W. Bruce, of New York, to be applied "to the construction of a photographic telescope having an objective of about 24 inches aperture with a focal length of about 11 feet; . . . also to secure its use under favourable climatic conditions in such a way as will best advance astronomical science."

A STATUE of Paul Bert was unveiled at Auxerre on Sunday last. The ceremony was attended by the Annamite Envoys, and M. Spuller represented the French Government.

DR. E. HEINRICHER has been appointed Professor of Botany and Director of the Botanical Garden at Innsbrück; and Dr. H. Ambronn, Professor of Botany at Leipzig.

THE number of working botanists in Portugal is so small that it is with great satisfaction we are able to announce the appointment of Dr. G. von Lagerheim of Stockholm, recently of Freiburg-i-B., as assistant in the botanical laboratory of the Polytechnic School at Lisbon.

IT is stated that the Imperial Museum of Vienna has accepted the eccentric conditions of the bequest of the late Prof. H. G. Reichenbach, of Hamburg, according to which his extensive collection of dried orchids and drawings of orchids shall be placed in sealed packets in the Museum, and shall not be exhibited or in any way used within twenty-five years of his death.

THE *Kew Bulletin* for July consists of an excellent guide to the botanical literature of the British Empire. The primary object of the compilation is to supply useful information on the literature of the systematic, economic, and geographical botany of British Possessions, Dependencies, and Protectorates. The compiler explains that Kew is often called upon to answer questions, on the shortest notice, concerning the vegetation of some remote part of the world, and the best books to consult on the subject. Such questions are not always easily answered, and they frequently entail a considerable expenditure of time. The intention is that the present guide shall supply what is wanted, and everyone who may have occasion to use it will find that it is admirably adapted to its purpose.

MR. THOMAS SCOTT, of the Scientific Department of the Scottish Fishery Board, on June 27, in the Moray Firth, successfully fertilized the ova of the lemon sole (*Pleuronectes microcephalus*) with the milt of the turbot (*Rhombus maximus*). Development proceeded rapidly for three days and a half, when the ova were killed by dust getting into the water, and they sank. At this period the embryo was well formed, development was going on quickly, and hatching would probably have occurred on the seventh or eighth day.

LAST week, the Rev. W. S. Green, Mr. W. de Vismes Kane, and other zoologists, had a successful trawling expedition in the Atlantic, off the Irish coast. They started from Queenstown, in the *Flying Fox*, on Monday, July 1, and returned on Sunday. All the captures were divided and subdivided into different classes, carefully preserved in spirits, and packed in the cases which were used in the *Challenger* Expedition; and they have been forwarded to the Natural History Department of the British Museum, for whose benefit the expedition was organized.

MISS MARIA MITCHELL, well known as a writer on astronomy, died recently in New York. She was the daughter of William Mitchell, astronomer, and was born in Nantucket, Massachusetts, on August 1, 1818. In 1847 she made the discovery of a comet, for which she received a gold medal from the King of Denmark, and other distinctions. During a visit to Europe, in 1858, she was the guest of Sir John Herschel and Sir George B. Airy, and afterwards she visited Leverrier in Paris and Humboldt in Berlin. In 1865 she was called to the Professorship of Astronomy at Vassar College, which, with the post of Director of the Observatory, she retained until January 1888, when she secured a long leave of absence. The degree of LL.D. was conferred upon Miss Mitchell by Hanover College in 1852, and by Columbia College in 1887. She was a member of various scientific Societies, and was the first woman elected to the American Academy of Arts and Sciences. She contributed numerous articles to scientific journals.

THE heat in Russia and other parts of Northern Europe has been intense of late. The Central Observatory at St. Petersburg has not recorded such a high temperature at the same time of the year since 1774.

A SHOCK of earthquake occurred at Guernsey on Monday afternoon, about 2.30. It was not quite so violent as that experienced on May 30. The weather during the whole of the morning was extremely sultry.

ON the evening of January 31 last, about 9 o'clock, the self-recording barometer at the Deutsche Seewarte showed a sudden dip of about 0·04 inch, with a corresponding jump upwards a few minutes afterwards; and in the course of a day or two it was found that the barographs at other stations exhibited a similar phenomenon. Although the disturbance cannot be compared in any way to the air-wave caused by the Krakatão eruption, yet the rapidity of its translation proved it to be a noteworthy meteorological phenomenon, and its behaviour over Central Europe is discussed in an article contributed to the *Annalen der Hydrographie und maritimen Meteorologie* for June, by Dr. E. Herrmann, of the Deutsche Seewarte. The disturbance is traced from Keitum (lat. 54° 54′), where it occurred at 7h. 50m. p.m., Berlin time, on January 31, to Pola (lat. 49° 42′), which it reached at 4h. 38m. a.m. on February 1, having travelled at the rate of about 71 miles per hour. In an easterly and westerly direction the disturbance seems to have been confined to narrow limits. The barometer was high over Southern Europe (30·5 in.), with minima (28·7 in.) over Northern Finland, and between Iceland and Norway. There was no earthquake in Europe at the time, and the cause of the phenomenon remains at present unexplained.

PÈRE CHEVALIER, S.J., Director of the Sikawei Meteorological Observatory, near Shanghai, has issued his monthly Bulletin for August last. It is an unusually interesting number, as it contains a full study, with diagrams, of the two typhoons which were felt at Shanghai and in the south of China. These elaborate studies of the typhoons of the China seas are invaluable, especially when supplemented by the labours of Dr. Doberck, of Hong Kong; of the Japan Observatory; and of that of Manilla, in the Philippine Islands. Père Chevalier has a number of charts showing the tracks of the storms.

THE Committee of the General Board of Studies of the Victoria University of Manchester have issued their report on local lectures during the past three sessions 1886–87 to 1888–89. Twenty courses of local lectures have been delivered, and the Committee state that they have every reason to be satisfied with the results obtained so far. The subjects selected have been very varied, ranging over many branches of literature and science. The local Committees have been of very different constitution, including Committees specially formed for the purpose of the lectures, Literary and Philosophical Societies, mechanics' institutes, and educational institutions of various grades; and the audiences, while mainly drawn from the middle classes, have in some cases consisted entirely of working men. The attendance at the lectures has been well maintained, averaging for all courses about 130.

IN the forty-third Annual Report of the Commissioners in Lunacy, just issued, it is stated that there were, on New Year's Day, 84,340 insane persons under restraint. Of these, 7970 were of the private class, 75,632 were paupers, and 738 were criminals. The Commissioners believe that during recent years medical men have become increasingly unwilling to certify to the insanity of persons requiring treatment, in consequence of the results of recent litigation connected with this part of their duties. The causes of insanity are set forth in a table covering 136,478 cases. These are very diverse. Thus 9569 persons lost their reason from domestic trouble, 8060 from adverse cicumstances, 8278 from over-work and worry, 3769 from religious excitement, and 18,290 from intemperance. The influence of heredity was ascertained in 28,063 cases, and congenital defect in 5881.

A BILL has been introduced into the House of Commons which would, if it became law, prove a great boon to young people in the rural districts. The object is to provide instruction in agricultural and horticultural subjects in public elementary schools, and to afford practical illustration in such teaching. The Industrial Agricultural Education Bill, as it is called, would not only secure for children in rural districts practical instruction on such subjects as fruit, flowers, and vegetable growing, the proper method of keeping cattle, rotation of crops, packing fruit for market, and other matters of equal importance: it proposes, further, that the instruction in these branches shall be carried on after the children leave school. To effect this it is proposed to establish schools at which lessons would be given in the evenings, and on Saturday afternoons. To induce parents to keep their children at school for a longer period, or to send them to the new schools, the promoters of the measure advocate the provision of a small number of scholarships of the value of thirty shillings per annum, and tenable for two years, for children who have passed the fourth standard. They foresee, also, that the ordinary appliances of elementary schools will not be sufficient to secure comprehensive instruction in practical agriculture, and they are bold enough to hope that a special grant will be made by the Education Office or the Science and Art Department for the expenses of such allotments, school gardens, and buildings as may be necessary to make the teaching thoroughly practical. The Bill is backed by Mr. George Dixon, Mr. Henry Fowler, Sir John Lubbock, Mr. Jesse Collings, Sir Bernhard Samuelson, Mr. Howell, Sir John Kennaway, Mr. Robert Reid, and Major Rasch.

MESSRS. TRÜBNER AND CO. will publish, probably in October, "An Account of the Aborigines of Tasmania, their Manners, Customs, Wars, Hunting, Food, Morals, Language, Origin, and General Characteristics," by Henry Ling Roth, assisted by E. Marion Butler. The work will contain a chapter on the osteology, by Dr. J. G. Garson, and a preface will be contributed by Dr. E. B. Tylor. Numerous autotype plates, from original drawings made by Edith May Roth, will illustrate the text. The edition will be strictly limited to subscribers.

THE Delegates of the Clarendon Press will shortly issue Mr. Oliver Aplin's "Birds of Oxfordshire"; the second volume (treating of electro-dynamics) of Messrs. Watson and Burbury's "Mathematical Theory of Electricity and Magnetism"; and a new edition of the fourth volume (on the dynamics of material systems) of Prof. Bartholomew Price's "Treatise on Infinitesimal Calculus."

IN the new number of the *Internationales Archiv für Ethnographie* (Band ii., Heft 3) Mr. Felix Driessen gives an interesting account, in English, of tie and dye work, manufactured at Semarang, Java. The article is accompanied by a plate representing the manufacture in all its different stages. Mr. R. Parkinson continues his excellent notes, in German, on the ethnology of the Gilbert Islanders. The valuable German paper, by Dr. F. von Luschan, on a Turkish "Schattenspiel," is also continued. The number, like its predecessors, has many notes on ethnographical museums, collections, and books.

THE Department of Mines, Sydney, has issued the first number of what promises to be a valuable publication—*Records of the Geological Survey of New South Wales*. It opens with "Notes on the Geology of the Barrier Ranges District and Mount Browne and Tibooburra Gold Fields," by Mr. C. S. Wilkinson. Messrs. T. W. E. David and R. Etheridge, Jun., contribute an interesting report on the discovery of human remains in the sand and pumice bed at Long Bay, near Botany. There are other papers by the same writers, and by Mr. W. Anderson, Mr. J. C. H. Mingaye, and Mr. H. W. Powell.

MESSRS. GEORGE PHILIP AND SON have issued the third volume of the well-known series, "Rustic Walking Tours in the London Vicinity." It deals with the west-to-south district, and contains a field-path map, a geographical description, forty-five charts, with ample and plain directions, and an index.

A LITTLE book called "Walks in Holland," edited by Mr. Percy Lindley, has just been issued. It presents concisely much information that may be of service to tourists.

THE other day the plough of a peasant in the island of Gothland unearthed a valuable treasure, consisting of two large spiral armlets, a buckle, and a long bar used in payment, all of solid silver, together with nearly 400 silver coins. Some of the coins were Anglo-Saxon, and bore the effigy of King Ethelred. The others were German and Cufic coins. The "find" has been purchased by the State.

THE richness of the cod fisheries this spring on the coast of Finmarken has clearly shown that these fisheries are not in the least affected by whales. The Government has voted a sum of £850 towards the cost of a Commission for dealing with the much-needed protection of the whale.

THE preservation of the eider in Sweden is to be extended from April 24 to May 31. Through strict protection these valuable birds have increased greatly in recent years along the Baltic and the Cattegat.

DR. SCHWEINFURTH has presented a valuable collection of plants from Yemen to the Christiania Museum.

THE late Mr. Wilson, of Gothenburg, has left a legacy of £5500 to that city for the promotion of science, art, and education. He has also left his valuable collections to the Gothenburg Museum. A few years ago Mr. Wilson endowed this institution with a similar sum.

THE Finnish naturalist, Dr. J. Kinunen, has set out on a voyage of scientific research to Nova Zembla and adjacent parts.

A NEW series of double oxalates of the rare metal rhodium and the metals of the alkalies or alkaline earths are described by M. Leidié in the July number of the *Annales de Chimie et de Physique*. The hydrate of rhodium sesquioxide, $Rh_2(OH)_6$, a substance having the peculiar appearance of a black jelly, and which is but slightly attacked by most acids, dissolves readily, when recently precipitated, in a concentrated solution of oxalic acid. On evaporation of this solution, containing presumably rhodium oxalate, no crystalline oxalate is obtained, but only a non-crystallizable transparent mass. If, however, this solution is evaporated along with a solution of neutral oxalate of potassium, sodium, or ammonium, on cooling beautiful garnet-red crystals of a double oxalate are deposited, containing one molecule of the oxalate of rhodium sesquioxide and three molecules of the alkaline oxalate. The potassium salt, $Rh_2(C_2O_4)_3 \cdot 3C_2K_2O_4 \cdot 9H_2O$, separates from solution in red triclinic prisms, very soluble in water. The largest crystals are obtained from a perfectly neutral solution, and may be most readily prepared by saturating a boiling solution of acid potassium oxalate with recently precipitated hydrate of rhodium sesquioxide. It is an evidence of the strength of the combination that the solution gives none of the characteristic tests for rhodium, not being precipitated either by potash or soda, and only partially by sulphuretted hydrogen. The ammonium compound $Rh_2(C_2O_4)_3 \cdot 3C_2(NH_4)_2O_4 \cdot 9H_2O$ is isomorphous with the potassium salt, and crystallizes in smaller red prisms. It is soluble in its own weight of warm water. On the other hand, the sodium salt crystallizes with $12H_2O$, in red prisms which are very efflorescent. The salts containing the alkaline earthy metals are much less soluble, and are generally obtained as crystalline precipitates by decomposition of the potassium salt by the chloride of the metal which it is desired to introduce. It is interesting that these salts are perfectly analogous to the double oxalates of ferric iron and chromium, $Fe_2(C_2O_4)_3 . 3C_2(NH_4)_2O_4$, for instance; but the two series are not isomorphous owing to the difference in water of crystallization. Evidence of similarity between iron and rhodium is of course shown by the fact that their most stable chlorides are those derived from the sesquioxides—namely, Fe_2Cl_6 and Rh_2Cl_6; but the formation of these double oxalates shows that the connection is perhaps closer than has hitherto been supposed. And the interest in this connection is by no means lessened by the fact that iron and rhodium occupy corresponding positions in the eighth vertical group of Prof. Mendeleeff's periodic classification.

THE additions to the Zoological Society's Gardens during the past week include two Indian Jerboas (*Alactaya indica*) from India, presented by Mr. Cuthbert Johnson; a Bonnet Monkey (*Macacus sinicus* ♀, white variety) from India, presented by the Waterbury Watch (Sales) Company, Limited; a Lesser White-nosed Monkey (*Cercopithecus petaurista* ♀) from West Africa, presented by Captain Stewart Stephens; a Brown Bear (*Ursus arctos* ♀), European, presented by Mr. John Foster Spence; a Polar Bear (*Ursus maritimus* ♀) from Spitzbergen, presented by Mr. Arnold Pike; a Python (sp. inc.), presented by Mrs. Bertha M. L. Bonser; a Hybrid Wild Swine (between *Sus scrofa* and *Sus domesticus* ♀) from Spain, presented by Mr. Ralph Banks, F.Z.S.; a Brush-tailed Kangaroo (*Petrogale penicillata* ♂) from New South Wales, presented by Sir Edmund A. H. Lechmere; five Violaceous Night Herons (*Nycticorax violaceus*) from St. Kitt's, W.I., presented by Dr. A. P. Boon, C.M.Z.S.; twelve Aldrovandi's Skinks (*Plestiodon auratus*) from North Africa, two Barnard's Parrakeets (*Platycercus barnardi*) from South Australia, purchased; a Laughing Kingfisher (*Dacelo gigantea*) from Australia, deposited; two Wonga Wonga Pigeons (*Leucosarcia picata*) from New South Wales, and a Red-winged Parrakeet (*Aprosmictus erythropterus*) from Australia, received in exchange; an African Wild Ass (*Equus tæniopus* ♀), and a Collared Fruit Bat (*Cynonycteris collaris*) born in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE LATE PROF. CACCIATORE.—Prof. G. Cacciatore, whose death we have briefly recorded (p. 208), had been associated with the Royal Observatory of Palermo, during nearly the whole of his life. He was born at Palermo on March 17, 1814, his father being the well-known Prof. Nicolo Cacciatore, assistant at one time to Piazzi, and later his successor in the directorship of the Observatory. Gaetano Cacciatore, on the death of his father in 1841, was appointed Director of the Observatory and Professor of Astronomy in the University of Palermo, and he held these positions until 1849, when, having taken a very prominent part in the revolution of the previous year, he was compelled to leave Palermo by the return to power of the Bourbons. In 1860, however, Garibaldi recalled him to his former position. He spared no pains to increase the power and usefulness of the Observatory, and greatly increased its equipment. It was under his direction that the scope of the institution was enlarged, so that in 1880 it was reorganized in three sections—one of Geometrical Astronomy; one of Physical Astronomy, in the modern sense of the word; and the third of Meteorology.

COMET 1889 *d* (SWIFT).—A new comet was discovered on July 5·833 G.M.T., by Prof. Lewis Swift, of the Warner Observatory, Rochester, New York. The comet's place was as follows:—

R.A. = 22h. 52m. 30s.		Daily Motion,	− 2m.
Decl. = 89° 11′.			+ 10′.

COMET 1889 *b* (BARNARD, MARCH 31).—This object may soon again be observed in the early morning. The following elements and ephemeris are by Prof. Millosevich, from observations made at the Lick Observatory on March 31, April 15 and 29 (*Astr. Nach.* No. 2907):—

T = 1889 June 10·63608 Berlin M.T.

$$\left.\begin{array}{l} \pi = 186^\circ\ 38'\ 20''\cdot8 \\ \Omega = 310\ \ 40\ \ 19\cdot3 \\ \iota = 163\ \ 49\ \ 47\cdot8 \end{array}\right\}\text{Mean Eq. 1889·0.}$$
$$\log q = 0\cdot353613$$

Error of middle place O − C).

$$\Delta\lambda = -\ 1''\cdot3. \quad \Delta\beta = +\ 5''\cdot4.$$

Ephemeris for Berlin Midnight.

1889.	R.A.			Decl.			Log *r*.	Log Δ.	Brightness.
	h.	m.	s.	°	′				
July 19	5	7	52	10	59·0	N.	0·3618	0·4706	0·83
23	5	7	1	10	34·4		0·3635	0·4624	0·85
27	5	5	53	10	7·7		0·3654	0·4534	0·88
31	5	4	26	9	38·7	N.	0·3675	0·4436	0·91

The brightness at discovery is taken as unity.

COMET 1889 *c* (BARNARD, JUNE 23).—The following elements for this comet are by Dr. H. Kreutz, from observations at Lick on June 23, at Strasburg June 25, and at Munich June 26; the ephemeris is by Prof. A. Krueger:—

T = 1889 July 2·8884 Berlin M.T.

$$\left.\begin{array}{l} \omega = \ \ 75^\circ\ 19'\cdot5 \\ \Omega = 278\ \ \ 6\cdot7 \\ \iota = \ \ 32\ \ 50\cdot2 \end{array}\right\}\text{Mean Eq. 1889·0.}$$
$$\log q = 0\cdot09248$$

Ephemeris for Berlin Midnight.

1889.	R.A.			Decl.			Log *r*.	Log Δ.	Brightness.
	h.	m.	s.	°	′				
July 14	3	1	51	47	38·9	N.	0·0970	0·1432	0·9
18	3	21	50	48	35·5		0·1006	0·1489	0·9
22	3	41	23	49	17·9		0·1051	0·1548	0·8
26	4	0	56	49	47·7	N.	0·1105	0·1603	0·8

The brightness at discovery is taken as unity.

COMET 1888 *e* (BARNARD, SEPTEMBER 2).—The following ephemeris is in continuation of that given in NATURE for May 30, p. 109:—

1889.	R.A.			Decl.			Log *r*.	Log Δ.	Brightness.
	h.	m.	s.	°	′				
July 11	21	7	34	0	1·4	N.	0·4287	0·2491	2·5
15	20	52	59	0	36·3	S.	0·4342	0·2487	2·4
19	20	38	17	1	16·7		0·4396	0·2509	2·4
23	20	23	44	1	58·9		0·4450	0·2559	2·3
27	20	9	33	2	42·0		0·4503	0·2634	2·2
31	19	55	58	3	25·0	S.	0·4556	0·2733	2·0

The brightness at discovery is taken as unity.

Mr. Barnard, observing this comet on June 3, at 3 a.m., noticed that it showed only one tail and that this *followed* the comet, and therefore pointed almost directly towards the sun. The tail was about a degree in length, and some 2′ or 3′ in breadth; position-angle, 90°. The head of the comet was roundish, with an almost stellar nucleus in an extended condensation, this latter having a position-angle of about 135°.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1889 *JULY* 14–20.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on July 14

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.				
	h.	m	h.	m.	h.	m.	h.	m.	°	′	
Mercury..	2	36	10	37	18	38	6	7·1	21	14	N.
Venus ...	1	10	8	51	16	32	4	20·8	18	8	N.
Mars ...	3	16	11	33	19	50	7	3·6	23	32	N.
Jupiter ...	18	38	22	32	2	26*	18	4·0	23	20	S.
Saturn ...	6	32	14	0	21	28	9	30·0	15	59	N.
Uranus...	12	6	17	36	23	6	13	7·4	6	31	S.
Neptune..	0	50	8	39	16	28	4	8·4	19	20	N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.